

## BONDERITE L-FG 31 ACHESON

Known as Deltaforge 31  
November 2014

### PRODUCT DESCRIPTION

BONDERITE L-FG 31 ACHESON provides the following product characteristics:

<b>Technology</b>	Lubricant
<b>Product Type</b>	Graphite in water dispersion
<b>Application</b>	Forging die lubricant

BONDERITE L-FG 31 ACHESON is one of the world's most widely used forging die lubricants.

BONDERITE L-FG 31 ACHESON exhibits excellent stability with no separation or settling in the concentrate. This assures constant quality from top to bottom and results in consistent forging performance.

BONDERITE L-FG 31 ACHESON is a water-based graphite die lubricant and it is formulated to provide excellent lubricity and release when used on difficult press work and highly automated processes, including hot, warm, and precision forging.

BONDERITE L-FG 31 ACHESON contains a uniquely fine particle size graphite. Together with its special stabiliser and binder system this results in excellent lubricity and release, unsurpassed wetting properties, higher dilution ratios, and a longer die life.

#### Special features

- **Very broad application window**
- **Suitable for a wide range of job types and sizes**
- **Extremely fine graphite for unsurpassed film formation properties**
- **High die life**
- **Improved part quality**
- **Reduced downtime**

#### Application Areas

Die lubricant for hot and warm forging.

BONDERITE L-FG 31 ACHESON is suitable for the production of a very wide range of forgings including crankshafts, CV-joints and bevel gears as well as sinter forging of for example conrods.

It suitable for a wide range of alloys including Plain Carbon Steels, Superalloys, Aluminium and Brass.

BONDERITE L-FG 31 ACHESON is designed for spray application. It can be applied manually or automated, by means of reciprocators or robot based spray systems.

### TECHNICAL DATA

Appearance	black medium viscous fluid
Pigment	high purity graphite
Carrier	water
Diluent	water
Density, kg/m <sup>3</sup>	1,100
Solids content, %	18

### DIRECTION OF USE

#### Preliminary Statement

Prior to use it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed. Please also refer to the local safety instructions and contact Henkel for analytical support.

#### Dilution & Mixing

BONDERITE L-FG 31 ACHESON is supplied as a concentrate to be diluted before use, allowing flexibility and economy of use. It is diluted with water, with the ratio determined by the conditions of use. Before dilution the concentrate should be homogenized. For the best results use clean water, with a low mineral content and free from microbial infection. Hard water will effect the performance of the product. Dilute by adding water to the concentrate. It is advised to stir the diluted product continuously at a slow speed to prevent sedimentation and ensure a homogenous performance.

#### Dilution Ratio

- 3 to 20 parts of water to 1 part of product, depending on severity of the forging operation and alloy.

#### Storage

Store BONDERITE L-FG 31 ACHESON in a cool place, but do not allow it to freeze. Product should not be used once frozen.

Storage in direct sunlight may overheat BONDERITE L-FG 31 ACHESON and impair performance.

Always tightly reseal the container to prevent evaporation or contamination.

#### Shelf-Life

- 24 months from date of qualification under original seal.

**Classification**

Please refer to the corresponding **Material Safety Data**

**Sheets** for details on:

- Hazards identification**
- Transport information**
- Regulatory information**

**ADDITIONAL INFORMATION****Disclaimer****Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

**In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:**

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

**In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

**In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:**

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

**Trademark usage**

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

## Reference 0.1